

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A wireless audio transmission and reception system comprising:
 - a pulse width amplifier to receive an audio signal and modulate a pulse width of a digital timing signal with said audio signal, such that the pulse width is proportional to an amplitude of said audio signal to provide a pulse width modulated signal;
 - an up-converter in communication with the pulse width amplifier to receive the pulse width modulated signal and convert said pulse width modulated signal to a modulated carrier signal;
 - a transmitter in communication with the modulated carrier signal to transfer the modulated carrier signal wirelessly;
 - a receiver to receive the modulated carrier signal;
 - a down-converter in communication with the receiver to receive the modulated carrier signal and extract the pulse width modulated signal from the modulated carrier signal; and

16 an integrator in communication with the down-converter to receive the
17 extracted pulse width modulated signal to remove a timing
18 signal from said extracted pulse width modulated signal to
19 restore the audio signal.

1 2. (Previously Presented) The system of claim 1 further comprising power
2 amplifier in communication with the integrator to receive the audio signal
3 and amplify said audio signal and transfer said amplified audio signal to a
4 transducer.

1 3. (Previously Presented) The system of claim 1 wherein the pulse width
2 amplifier comprises
3 a comparator having a first input to receive the audio signal and a
4 second input to receive the timing signal, said timing signal
5 having a triangular form such that, as said comparator
6 compares the audio signal and the timing signal, the pulse width
7 modulated signal is provided to an output of said comparator.

1 4. (Original) The system of claim 1 wherein the up-converter comprises a
2 modulation apparatus to combine a carrier frequency with the pulse width
3 modulated signal to form the modulated carrier signal.

1 5. (Original) The system of claim 4 wherein the modulation apparatus is
2 selected from a group of modulation apparatus consisting of frequency

3 shift keying modulation apparatus, amplitude shift keying modulation
4 apparatus, phase shift keying modulation apparatus, quadrature phase
5 shift keying modulation apparatus, time domain multiple access
6 modulation apparatus, and code domain multiple access modulation
7 apparatus.

1 6. (Original) The system of claim 1 wherein the down-converter comprises a
2 demodulation apparatus to extract the pulse width modulated signal from
3 the modulated carrier signal.

1 7. (Original) The system of claim 6 wherein the demodulation apparatus is
2 selected from a group of demodulation apparatus consisting of frequency
3 shift demodulation apparatus, amplitude shift keying demodulation
4 apparatus, phase shift keying demodulation apparatus, quadrature phase
5 shift keying demodulation apparatus, time domain multiple access
6 demodulation apparatus, and code domain multiple access demodulation
7 apparatus.

1 8. (Previously Presented) The system of claim 1 wherein the integrator is a
2 low pass filter having a cut off frequency suitable to pass the audio signal
3 and remove the timing signal.

1 9. (Original) The system of claim 1 wherein the carrier frequency is at least
2 900 MHz.

1 10. (Previously Presented) A wireless audio transmitter system comprising"

2 a pulse width amplifier to receive an audio signal and modulate a pulse
3 width of a digital timing signal with said audio signal, such that
4 the pulse width is proportional to an amplitude of said audio
5 signal to provide a pulse width modulated signal;

6 an up-converter in communication with the pulse width amplifier to
7 receive the pulse width modulated signal and convert said pulse
8 width modulated signal to a modulated carrier signal; and

9 a transmitter in communication with the modulated carrier signal to
10 transfer the modulated carrier signal wirelessly.

1 11. (Previously Presented) The transmitter system of claim 10 wherein the
2 pulse width amplifier comprises

3 a comparator having a first input to receive the audio signal and a
4 second input to receive the timing signal, said timing signal
5 having a triangular form such that, as said comparator
6 compares the audio signal and the timing signal, the pulse width
7 modulated signal is provided to an output of said comparator.

1 12. (Original) The transmitter system of claim 10 wherein the up-converter
2 comprises a modulation apparatus to combine a carrier frequency with the
3 pulse width modulated signal to form the modulated carrier signal.

- 1 13. (Original) The transmitter system of claim 12 wherein the modulation
2 apparatus is selected from a group of modulation apparatus consisting of
3 frequency shift keying modulation apparatus, amplitude shift keying
4 modulation apparatus, phase shift keying modulation apparatus,
5 quadrature phase shift keying modulation apparatus, time domain multiple
6 access modulation apparatus, and code domain multiple access
7 modulation apparatus.
- 8 14. (Original)The transmitter system of claim 10 wherein the carrier frequency
9 is at least 900 MHz.
- 1 15. (Previously Presented) A wireless audio receiver system comprising"
- 2 a receiver to receive a modulated carrier signal;
- 3 a down-converter in communication with the receiver to receive the
4 modulated carrier signal and extract a pulse width modulated
5 signal from the modulated carrier signal; and
- 6 an integrator in communication with the down-converter to receive the
7 extracted pulse width modulated signal to remove a timing
8 signal from said extracted pulse width modulated signal to
9 restore an audio signal.

- 1 16. (Original) The receiver system of claim 15 wherein the down-converter
2 comprises a demodulation apparatus to extract the pulse width modulated
3 signal from the modulated carrier signal.
- 1 17. (Original) The receiver system of claim 16 wherein the demodulation
2 apparatus is selected from a group of demodulation apparatus consisting
3 of frequency shift demodulation apparatus, amplitude shift keying
4 demodulation apparatus, phase shift keying demodulation apparatus,
5 quadrature phase shift keying demodulation apparatus, time domain
6 multiple access demodulation apparatus, and code domain multiple
7 access demodulation apparatus.
- 1 18. (Previously Presented) The receiver system of claim 15 wherein the
2 integrator is a low pass filter having a cut off frequency suitable to pass
3 the audio signal and remove the timing signal.
- 1 19. (Previously Presented) The receiver system of claim 15 wherein the
2 carrier frequency is at least 900 MHz.
- 1 20. (Previously Presented) A method for wireless transmission of an audio
2 signal comprising the steps of:
3 acquiring the audio signal;
4 comparing said audio signal with a timing signal;

5 from said comparing, forming a pulse width modulated signal;
6 up-converting the pulse width modulated signal to a modulated carrier
7 signal;
8 transmitting said modulated carrier signal;
9 receiving said modulated carrier signal;
10 down-converting said modulated carrier signal to restore the pulse
11 width modulated signal; and
12 integrating the restored pulse width modulated signal to remove a
13 timing signal from said restored pulse width modulated signal to
14 extract said audio signal.

1 21. (Previously Presented) The method of claim 20 further comprising the
2 steps of:

3 amplifying the restored audio signal
4 transferring the amplified audio signal to a transducer.

1 22. (Previously Presented) The method of claim 20 wherein the comparing the
2 audio signal to the timing signal and forming the pulse width modulated
3 signal comprises the step of:

4 forming the timing signal to have a triangular waveform;

5 comparing the amplitude of the audio signal to the amplitude of the
6 triangular waveform;

7 if the amplitude of the audio signal is greater than the amplitude of the
8 timing signal, setting the pulse width modulated signal to a first
9 logic level; and

10 if the amplitude of the audio signal is less than the amplitude of the
11 timing signal, setting the pulse width modulated signal to a
12 second logic level.

1 23. (Original) The method of claim 20 wherein the up converting the pulse
2 width modulating signal to the modulated carrier signal comprises the
3 steps of

4 combining a carrier frequency with the pulse width modulated signal to
5 form the modulated carrier signal.

1 24. (Original)The method of claim 23 wherein the combining of the carrier
2 frequency with the pulse width modulated signal is a modulating of the
3 carrier frequency by the pulse width modulated signals, said modulating
4 being selected from a group of modulating steps consisting of frequency
5 shift keying modulating, amplitude shift keying modulating, phase shift
6 keying modulating, quadrature phase shift keying modulating, time domain
7 multiple access modulating, and code domain multiple access modulating.

- 1 25. (Original) The method of claim 20 wherein the down-converting said
2 modulated carrier signal to restore the pulse width modulated signal
3 comprises the step of:
- 4 combining a local oscillator signal with the modulated carrier signal to
5 restore the pulse width modulated signal.
- 1 26. (Original) The method of claim 23 wherein combining of local oscillator
2 signal with the carrier frequency is a demodulating of the carrier frequency
3 to extract the pulse width modulated signals, said demodulating being
4 selected from a group of demodulating steps consisting of frequency shift
5 keying demodulating, amplitude shift keying demodulating, phase shift
6 keying demodulating, quadrature phase shift keying demodulating, time
7 domain multiple access demodulating, and code domain multiple access
8 demodulating.
- 1 27. (Original) The method of claim 20 wherein the carrier signal is at least 900
2 MHz.